## AMENDMENTS TO THE CLAIMS

1. (currently amended) A macroscopic scaffold comprising amphiphilic peptides and living cells, wherein said peptides have alternating hydrophobic and hydrophilic amino acids, are complementary and structurally compatible, and self-assemble into a beta-sheet macroscopic scaffold; and wherein said macroscopic scaffold is formed by the peptides self-assembling to encapsulate the living cells, said cells being present within said macroscopic scaffold in a three-dimensional arrangement.

2. (original) The macroscopic scaffold of claim 1, further encapsulating a therapeutically active compound or chemoattractant.

3. (original) The macroscopic scaffold of claim 1, wherein said peptides comprise an adhesion site, growth factor binding site, growth factor, or sequence that provides targeting to a cell, tissue, organ, organ system, or site within an mammal.

4. (original) The macroscopic scaffold of claim 1, wherein said living cells are neurons and said macroscopic scaffold allows axonal outgrowth by said neurons.

5. (previously presented) The macroscopic scaffold of claim 1, wherein said cells are chondrocytes, bone marrow cells, osteocytes, periosteal cells, perichondrial cells, fibroblasts, neuronal cells, hippocampal cells, epidermal cells, endothelial cells, keratinocytes, basal cells, spinous cells, granular cells, embryonic stem cells, ovarian cells, pancreatic cells, cervical cells, liver cells, or foreskin cells.

6. (original) The macroscopic scaffold of claim 1, wherein said cells secrete extracellular matrix components.

7. (original) The macroscopic scaffold of claim 6, wherein said secretion of extracellular matrix components increases the equilibrium compression modulus of said macroscopic scaffold by at least 50 fold.

8. (previously presented) The macroscopic scaffold of claim 1, wherein at least 60% of the encapsulated cells are in cell-cell contact with another encapsulated cell.

9 – 18. (canceled)

19. (previously presented) The macroscopic scaffold of claim 1, wherein said cells are chondrocytes.

20. (currently amended) ~~The~~ A macroscopic scaffold ~~of claim 1, wherein said~~ comprising amphiphilic peptides and living cells, wherein said peptides have alternating hydrophobic and hydrophilic amino acids comprise multiple KLD subunits, are complementary and structurally compatible, and self-assemble into a beta-sheet macroscopic scaffold; and wherein said macroscopic scaffold is formed by the peptides self-assembling to encapsulate the living cells, said cells being present within said macroscopic scaffold in a three-dimensional arrangement.

21. (canceled)

22. (previously presented) The macroscopic scaffold of claim 6, wherein said secretion of extracellular matrix components increases the strength of said macroscopic scaffold.

23. (previously presented) The macroscopic scaffold of claim 6, wherein said secretion of extracellular matrix components increases the stiffness of said macroscopic scaffold.

24. (previously presented) The macroscopic scaffold of claim 6, wherein said secretion of extracellular matrix components increases the equilibrium compression modulus of said macroscopic scaffold.

25. (canceled)

26. (canceled)

27. (previously presented) The macroscopic scaffold of claim 24, wherein said secretion of extracellular matrix components increases the equilibrium compression modulus of said macroscopic scaffold by between 5-fold and 50-fold.

28. (previously presented) The macroscopic scaffold of claim 1, wherein said cells are autologous or allogeneic with respect to a subject.

29. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is pre-shaped to fit a tissue defect.

30. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is subjected to static or dynamic compression or a combination thereof.

31. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is formed from a casting solution containing cells at a concentration of between 0.5 million and 15 million per ml of volume.

32. (previously presented) The macroscopic scaffold of claim 1, wherein said cells divide after encapsulation within the macroscopic scaffold.

33. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is subjected to static or dynamic compression or a combination thereof, wherein the dynamic compression is applied at 0.01 to 3 Hz.

34. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold has a predetermined shape or volume.

35. (previously presented) The macroscopic scaffold of claim 1, wherein the cells encapsulated in said macroscopic scaffold are substantially uniformly distributed therein.

36. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is formed by

(a) incubating peptides and living cells in an aqueous solution comprising a predetermined concentration of a carbohydrate or glycerol and having sufficient osmolarity to maintain cell viability under conditions that do not allow the peptides to substantially self-assemble; and

(b) adding an electrolyte to said solution sufficient to initiate self-assembly of said peptides into a beta-sheet macroscopic scaffold, whereby said cells are encapsulated by the formation of said macroscopic scaffold and are present in said macroscopic scaffold in a three-dimensional arrangement.

37. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is formed by

(a) incubating living cells in an aqueous solution comprising a predetermined concentration of a carbohydrate or glycerol and having sufficient osmolarity to maintain cell viability under conditions that do not allow the peptides to substantially self-assemble;

(b) mixing the aqueous solution containing living cells and with a peptide solution; and

(c) adding an electrolyte to the sufficient to initiate self-assembly of said peptides into a beta-sheet macroscopic scaffold to the solution resulting from step (b), whereby said cells are encapsulated by the formation of said macroscopic scaffold and are present in said macroscopic scaffold in a three-dimensional arrangement.

38. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is formed by

(a) dissolving peptides in a solution comprising a predetermined concentration of a carbohydrate or glycerol and having sufficient osmolarity to maintain cell viability under conditions that do not allow the peptides to substantially self-assemble;

(b) adding living cells to the solution containing the peptides; and

(c) adding an electrolyte to said solution sufficient to initiate self-assembly of said peptides into a beta-sheet macroscopic scaffold, whereby said cells are encapsulated by the formation of said macroscopic scaffold and are present in said macroscopic scaffold in a three-dimensional arrangement.

39. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is formed by

(a) incubating peptides and living cells in a solution comprising a predetermined concentration of a carbohydrate or glycerol and having sufficient osmolarity to maintain cell viability under conditions that do not allow the peptides to substantially self-assemble, wherein said solution is contained in a pre-shaped mold dimensioned to determine the volume or shape of said macroscopic scaffold; and

(b) adding an electrolyte to said solution sufficient to initiate self-assembly of said peptides into a beta-sheet macroscopic scaffold, whereby said cells are encapsulated by the formation of said macroscopic scaffold and are present in said macroscopic scaffold in a three-dimensional arrangement.

40. (previously presented) The macroscopic scaffold of claim 1, wherein said macroscopic scaffold is subjected to static or dynamic compression, or a combination thereof, sufficient to increase secretion by cells encapsulated therein.